

Are 21st-Century Citizens Grieving for their Loss of Privacy?

Gregory J. Bott

University of Alabama, Tuscaloosa, USA

gjbott@cba.ua.edu

Karen Renaud

Abertay University, Dundee, United Kingdom

k.renaud@abertay.ac.uk

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Early Stage

ABSTRACT

Although much research exists that examines cognitive events leading up to information disclosure, such as risk-benefit analysis and state-based and trait-based attributes, minimal research exists that examines user responses after a direct or indirect breach of privacy. The present study examines 1,004 consumer responses to two different high-profile privacy breaches using sentiment analysis. Our findings indicate that individuals who experience an actual or surrogate privacy breach exhibit similar emotional responses, and that the pattern of responses resembles well-known reactions to other losses. Specifically, we present evidence that users contemplating evidence of a privacy invasion experience and communicate very similar responses as individuals who have lost loved ones, gone through a divorce or who face impending death because of a terminal illness. These responses parallel behavior associated with the Kübler-Ross's five stages of grief.

Keywords:

Privacy, grief, privacy concerns, privacy resignation

INTRODUCTION

The 21st-century citizen is under surveillance much more often than they realize, particularly those who live in developed countries. Airports watch our movements, government and private security cameras are plentiful, mobile phone apps monitor our activities and connections, and collect our very personal information. Hackers breach personal information for fun and financial gain. How does the 21st-century citizen feel about this? There are some who argue that “Privacy is Dead.” These include Mark Zuckerberg, co-founder of Facebook (Johnson 2010), Schmidt from Google (Esguerra 2009), Ellison from Oracle (Poulsen 2002) and the British Prime Minister, who formulated what many refer to as the “Snooper’s Charter” (Carlo 2016). This proposes to give the UK intelligence community full access to every British citizen’s activity on the Internet without oversight from the judiciary.

Those who consider privacy an anachronism are seemingly unconcerned about individual privacy expectations or rights. Governments consistently overrun privacy under the banner of security. For example, in 2012, the number of CCTVs in London had reached 422,000—one for every 14 people in the city (McCahill & Norris 2002). Companies such as Google offer us free services and, in return for those services, we sacrifice our privacy. If Zuckerberg and like-minded others are right, we should have no expectation of privacy. His opinion is understandable considering that Facebook effectively resells personal information—generating billions in annual revenue from having access to people’s personal information.

Some voices protest such widespread discarding of privacy expectations (Renaud, Flowerday, English & Volkamer 2016). Some are alarmed by the fact that we seem to be sleepwalking into a George Orwell dystopian nightmare (Alexander 2015), concerned that over surveillance is creating a “prison of the mind” (Foucault 1975). Unremitting observation is not

without its harms, especially when the person being observed is not able to determine when it is occurring, and thus has always to behave as if someone is watching. It is this uncertainty, Foucault argues, that limits our freedoms and makes automatons of us.

These protestations against the death of privacy are necessarily post disclosure of personal information. However, the majority of information-privacy research is pre-disclosure and focused on how and why individuals choose to disclose personal information. Information disclosure is the dependent variable of the vast majority of privacy research. The purpose of the research reported here is to examine how individual reactions post-disclosure and to examine post privacy loss responses.

STAGES OF GRIEF

Based on their book, “On Death and Dying,” Kübler-Ross *et al.* provide a five-stage process for understanding how individuals respond to loss. The authors emphasize that individuals do not necessarily experience the stages in a linear fashion or even experience all five of the stages (Kübler-Ross *et al.* 2007). Furthermore, an individual may return to one or more of the stages over time. The five stages of grief are widely known, and they represent one of many theories involving an orderly progression through discrete stages of grief or loss (Bonanno *et al.* 2002; Bowlby 1961; Maciejewski *et al.* 2007). The five stages serve as a common set of reference points for identifying emotions associated with the loss of a loved one. The five stages are denial, anger, bargaining, depression, and acceptance.

Denial, the first stage, is not disbelief of the fact that one truly has a terminal illness or that a loved one has actually died. Rather, it is more symbolic as in the expectation that the loved one will be home after work, or just about to walk through the door, or is on the way home from a trip. Denial in privacy loss is the disbelief that this breach could happen to me or maybe that

everyone else's information was compromised, but just not mine. During this stage, an individual is unable to connect with the reality of the situation or to begin processing the loss to remedy the situation or progress towards acceptance.

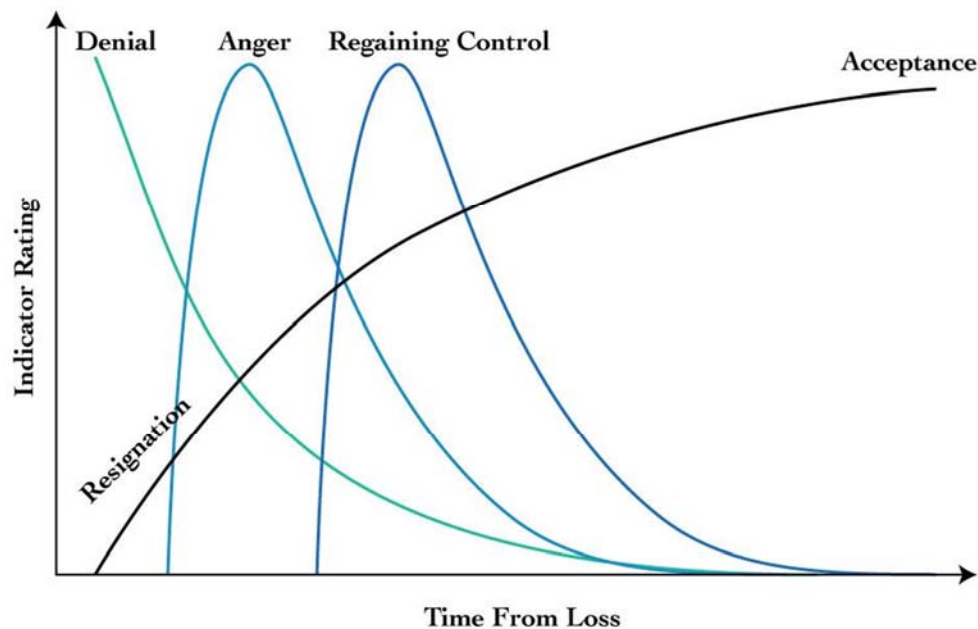


Figure 1 - Loss Grieving Stages (Adapted from Maciejewski et al., 2007)

Anger is the second stage. Anger may be directed at many different targets: at the self for not preventing the loss, at the loved one for leaving, or against God and nature for the unfairness of the situation. Similarly, within privacy loss, an individual may direct anger at themselves for not taking protective action, at others for incompetence, or the government for not enacting tougher penalties and enforcement mechanisms or for even being complicit in the privacy breach.

The third stage is bargaining, which does not mean leveraging a position to achieve a more favorable position. Rather, bargaining begins a series of scenario evaluations such as “what if” and “if only” I had taken a particular action. The corollary in privacy are actions not taken

that would have resulted in greater privacy protection. These actions include actions within the control of the user and outside the control of the users. For example, users may select stronger passwords, use a unique password for different systems, avoid sharing passwords with others or not connect their device to an open Wi-Fi access point. Actions of companies like Samsung, Equifax, and Target are out of the user's control. However, a user may chide themselves for selecting a Samsung brand TV over a different brand that does not have privacy issues or even for shopping at Target instead of a different store.

Although resignation is not a stage in the grieving process, it surfaced as an opinion topic in our analysis. Prior research indicates individuals who feel resigned to the inability to influence a positive privacy outcome are more likely to disclose personal information (Bott 2017; Sharma and Crossler 2014). Resignation may lead to depression in a manner similar to learned helplessness (Maier and Seligman 1976). (Friedman, R., James 2008). Literature Review

Information privacy literature has investigated a wide variety of individual privacy topics including antecedents, concern for information privacy, privacy calculus, economic trade-off of personal information for perceived benefits, and the impact of situations on personal information disclosure (Acquisti *et al.* 2016; Crossler *et al.* 2013; Phelps *et al.* 2001; Posey *et al.* 2011; Smith *et al.* 2011). The vast majority of privacy research focuses on privacy events and actions that are “left of bang”-- an activity that takes place prior to information disclosure. However, very few studies exist that examine individual “right of bang” events.

Only one other study has proposed a similar theoretical approach to understanding and classifying individual responses to privacy breaches (Bachura and Chen 2017). Using Twitter feed data, the authors analyzed responses to the 2015 OPM data breach and found support for

four of the five adapted stages over a time period of approximately two months. The authors discount the possibility of bargaining and consequently dropped it from the model.

At the organization level, several studies discuss “post” privacy loss. One study involves the impact of making a privacy breach public. Privacy breaches have a significant and measurable impact on a company’s market value—though the market impact has been shown to be temporary (Acquisti *et al.* 2006). Perhaps, a greater challenge for organizations is to regain the trust of its users after a privacy breach. Organizations that fall victim to hacking attacks or those who have shared information without authorization may regain trust by offering an apology (Bansal & Zahedi 2015). Some employees consider being surveilled by their company to be a breach of their personal privacy. Within organizations that monitor employee computer use, in addition to considering such monitoring a breach of privacy, employees also perceive computer monitoring as a form of procedural injustice. In those cases, monitoring actually results in greater levels of computer abuse.

One reason for the scarcity of post-privacy loss research may be the difficulty of obtaining useful information due to the sunk cost fallacy (Cachon & Camerer 1996). Arguably the optimal dataset to study this phenomenon are timely reactions to actual, real-world and personal privacy breaches. An experiment that truly violates individual privacy would be enlightening. However, various overseeing institutions may take issue and thwart research experiments aimed at intentionally violating an individual’s personal privacy. Consequently, this data set may best be obtained from the field.

It is non-trivial to measure to people’s actual feelings about privacy. This is not a matter that is particularly amenable to self-report and when individuals do report their privacy decisions, sometimes their actions do not match their stated decision. Evidence supports

contradictions between what people say and what they do regarding privacy decisions and intentions to protect personal information (Connelly, Khalil, & Liu 2007; Norberg et al. 2007). However, instead of asking people what they *would* do, we examine reactions to real privacy invasions to detect signs of underlying emotional responses.

People reveal their emotions in what they say and write (Pang & Lee 2008), especially when they are not being asked privacy-specific questions by a researcher who might prime their responses, leading to paradoxical answer or resulting in a social desirability response (Fisher 1993, 2002). If they are expressing themselves freely, immediately after learning about a privacy invasion, we are much closer to the optimal dataset to assess emotional responses “right of bang.” Bachura *et al.* (2017) carried out a study of tweets on the Twitter platform to assess this. Our study seeks to confirm and extend their findings.

METHOD

Research Design

To explore individuals’ reactions to privacy invasions, we performed two analyses of revealed privacy invasions. We did not analyze the media reports themselves, but rather the comments posted by those who read and responded to the media reports. Examining user comments enabled us to explore responses to privacy invasions. We present the findings in the next section.

To gauge reactions to privacy invasions we chose two high-profile privacy breaches that occurred in 2015: (1) Samsung’s breach of consumer privacy by surreptitiously capturing conversations (even while the TV was powered off), and (2) the Cayla doll that secretly collected and transmitted, over the Internet, everything it heard. Because we wanted to gauge reactions, we were interested only in the comments people made on these stories, not the actual news items

themselves. We searched for news items with comments during February 2015 (for Samsung, see Figure 2) and June 2015 - April 2017 (for Cayla, see Figure 3). These dates coincide with the media storm that occurred based on the first mention of these particular privacy-related stories. We searched for “Samsung TV” and comments; and “Cayla doll” and comments on Google News. We also searched Reddit for related stories, since that platform encourages comment.

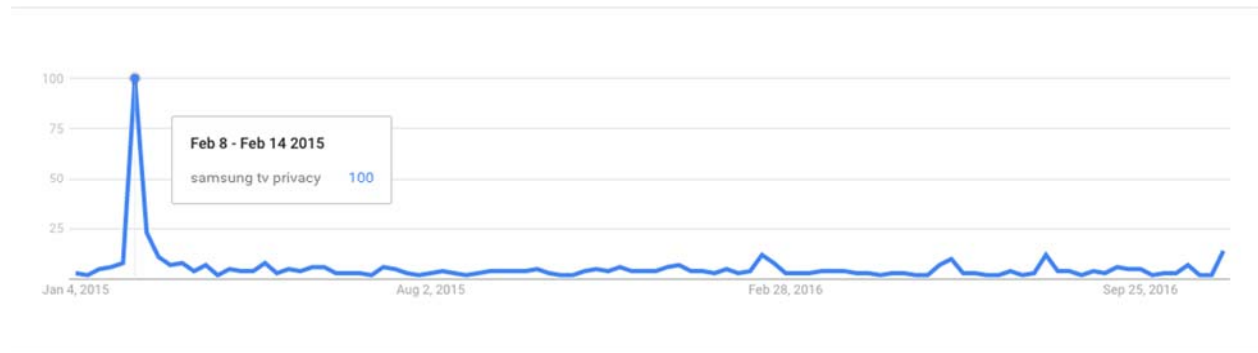


Figure 2 - Google Trends Graph showing the timeline of the media storm related to Samsung eavesdropping

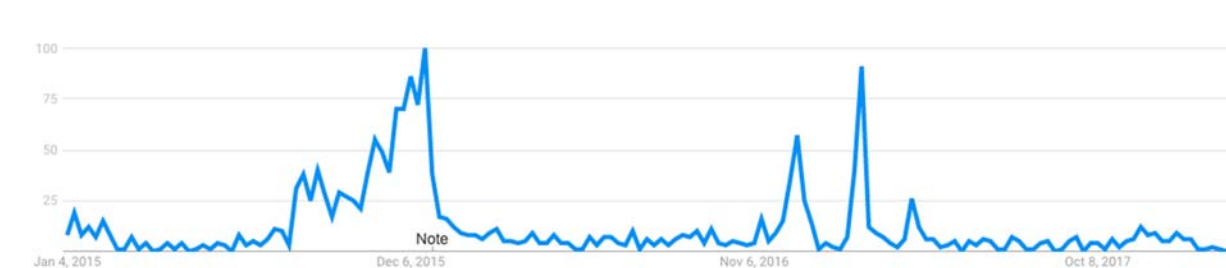


Figure 3 - Google Trends graph depicting the two-peaked media storm about the Cayla Doll

Thirty-four Samsung newspaper articles were found, some of which did not have comments. A total of 940 Samsung comments on 20 newspaper articles that allowed comments were available for analysis. We downloaded all the comments that were made on these two media theme news stories, and then categorized them using opinion mining and sentiment analysis (Pang & Lee 2008).

To carry out the sentiment analysis we carried out a qualitative analysis. We categorized each comment based on the sentiment expressed by the comment. We then clustered similar

comments based on similar expressed sentiments. Table 1 provides a sample of the words/phrases we classified into each of the super categories, mapped to Kübler-Ross and Kessler's quotes aligning with the "grieving" categories (Kübler-Ross *et al.* 2007), following the way Hobbs demonstrated similarities (Hobbs 2013).

Table 1: Examples of Comment Phrases Classified into the Categories

Table 1 - Stages of grief and associated comments

Stage	Kübler-Ross & Kessler Examples (Kübler-Ross and Kessler 1969)	Example Comments
Denial	"I feel fine", "This can't be happening, not to me."	"No one cares", "Boring", "So dumb", "Load of crap", "Paranoid", "BS", "Not an issue".
Anger	"Why me? It's not fair!"; "How can this happen to me?", "Who is to blame?"	Violated, Scary, Hate, Fed Up, Stalked, "Privacy rights", "Wake Up", "Angry", "Outraged", "Annoyed", "Mad", "Illegal", "Frightening"
Establishing Control (Bargaining)	"I'll do anything for a few more years", "I will give my life savings if..."	"The answer is to...", "Stop using...", "I will never use/buy...", "Disable ...", "You can turn off...", "We can only blame ourselves," "Don't Connect."
Resignation	"I'm so sad, why bother with anything?", "I'm going to die soon so what's the point?", "I miss my loved one, why go on?"	"1984", "NSA", "George Orwell," "No Choice"
Acceptance	"It's going to be okay", "I can't fight it, I may as well prepare for it."	"So What", "Nothing to hide", "Safe", "Government has access anyway", "I'm OK", "They are welcome", "So they collect data", "Nothing to see", "A Good Thing", "Gave Permission".

Findings

A pattern emerged (see Figure 4), which resembled a pattern of responses similar to the Kübler-Ross & Kessler Privacy Grieving Stages (Kübler-Ross *et al.* 2007). Specifically, responses coalesced into similar emotion responses as the five stages of grief. In so doing, we confirm and extend the findings of Bachura *et al.* (2017). Their study examined Twitter tweets, and also observed a pattern similar to the stages of grieving. However, they define bargaining as

the ability for an individual to engage an organization to achieve an outcome rather than an individual posing “what if” and “if only” questions and moving towards regaining control. We studied comments on newspaper reports, and confirmed their observations on four of the five stages, demonstrated how bargaining emerges from individual reactions and explained the role of resignation and acceptance.

Forty-three comments were classified as questions--people asking for more information related to the story. Thirty-four comments were completely unrelated to the story (e.g., advertisers, spammers, trolls).

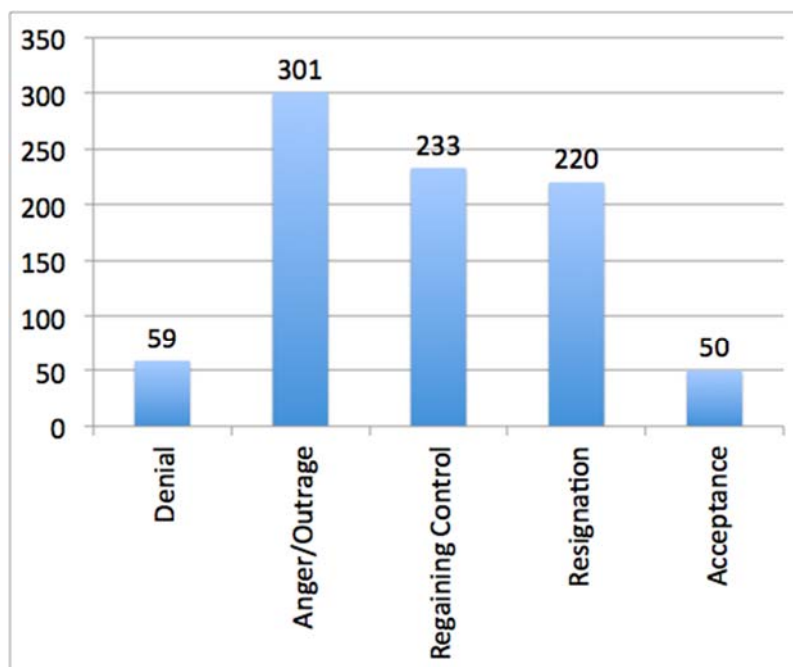


Figure 4 -Samsung-Related Comments that aligned with the Privacy Grieving Stages

Only 5 of the 33 distinct news articles that were returned when we searched for Cayla items allowed user comments (N=104). We analyzed them in the same way as the Samsung comments. This time the graph looks slightly different (see Figure 5). Moreover, a new category emerged: “Explanations.” The 11 comments that fell into that category explained how the doll could be compromised.

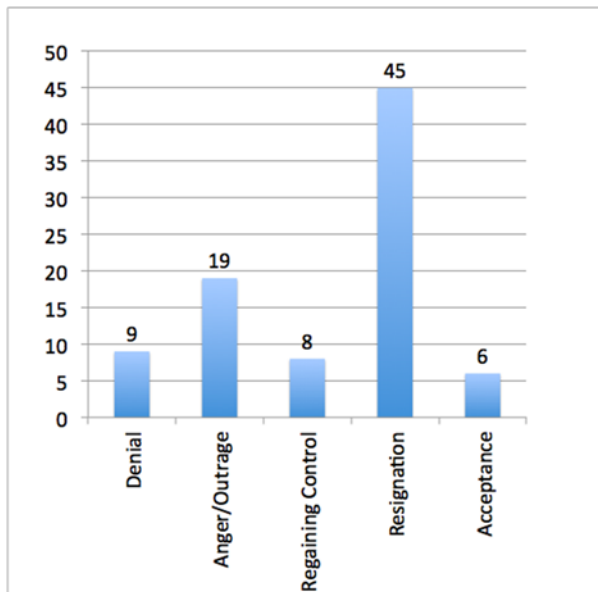


Figure 5 - Categorization of Comments on Cayla Doll Privacy Invasion

Stages (Bott 2017; Sharma & Crossler 2014). Resignation may lead to depression in a manner similar to learned helplessness (Maier & Seligman 1976).

Depression, though certainly not a desirable state may lead to a more positive outcome. Kübler-Ross et al. (2007) note the importance of depression and its role in starting the healing process. Similarly, individuals may feel profound sadness at the realization that their information, once considered personal and possibly sensitive and confidential, is out there for all to see.

Acceptance is the last of the five stages. Acceptance does not mean individuals are suddenly “fine” with the loss. Rather, acceptance means recognizing the current reality of life with the loss being ever-present is permanent. Resignation may also lead to acceptance. An individual that accepts the reality or perceived reality that their information has already been obtained by a third-party may move to acceptance more rapidly.

The original grieving stages suggested by Kübler-Ross and Kessler has been embraced as well as criticized in the academic literature. At the core of such criticisms is the notion that grief

follows some fixed progression between the stages or that it follows a predetermined timeline (Sánchez 2005). Others claim that the staged model was not the product of scientific research (Friedman & James 2008). Friedman and James argue that wide acceptance of the model does not constitute evidence of its veracity. We do not presume to enter into this debate. Instead, we provide empirical evidence that responses to privacy invasions, either personally applicable or vicarious, appear to fall into a number of categories, and that there are similarities between these categories and the proposed grieving stages.

Sampling Frame and Appeal Contextualization

Instrument Design

We plan to adapt the questions used by Blau (2008) to assess the existence of our response categories. We will first ask them to read a story about a privacy invasion such as the Samsung TV or Cayla newspaper stories. The questions will then be randomized before presenting them to candidates (see Table 2).

Table 2 - Survey Instrument

Question	Stage (emotional response)
1. I can't believe my privacy is being invaded as this newspaper report suggests 2. I am in total disbelief that this is happening 3. I can't believe this will happen to me	Denial
1. I am angry that my privacy is being invaded like this	Anger

<ul style="list-style-type: none"> 2. I feel hostility towards [COMPANY] 3. I feel furious that this is happening 	
<ul style="list-style-type: none"> 1. I should be able to do something to stop this privacy invasion 2. I can avoid connecting the device to the WiFi 3. If they want my data, they should negotiate it with me 	Establishing Control
<ul style="list-style-type: none"> 1. Regardless of my actions, I am unable to prevent disclosure of my personal information. 2. No matter how much effort I put into protecting my privacy I feel I have no control over the outcome. 3. Many organizations already have more information about me than I want them to have. 	Resignation (Bott 2017; Quinless and Nelson 1988)
<ul style="list-style-type: none"> 1. I know this kind of privacy invasion is pretty inevitable 2. I can make my peace with this kind of privacy invasion 	Acceptance

3. I can accept this kind of privacy invasion	
If none of the above represents your response, please describe how you felt	Other

Next, we will explore some possible antecedents that might lead to people experiencing these emotions in response to a privacy-invasive story. Possible antecedents are presented in Table 3.

Table 3- Possible antecedents and sources

Antecedent	Source
Technical Efficacy (self-rated)	(Blau 2008)
Age	(Livingstone <i>et al.</i> 2011)
Gender	(Sheehan 1999)
Country of Origin	(Insch & McBride 2004)
Perceived Privacy Risk: 1. Leaked Personal Information could be misused 2. Personal information could be shared with 3 rd parties without my knowledge 3. Personal information could be inappropriately used	(Liao <i>et al.</i> 2011)

Contribution to Practice

Our research adds to our understanding of how people react to privacy invasions. It addresses a gap in our understanding of how individuals process privacy breaches. Armed with this understanding organizations and regulatory bodies can better respond to individuals' whose privacy has been violated. More effective responses to privacy breaches could lead to restored trust more quickly and more deeply.

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